

ATTACHMENT A**SUBSTITUTE SPECIFICATION**

(Including All Changes Made to the Published Specification in International Application No. PCT/SE2005/000126)

**A CUBICAL BEVERAGE PACKAGING UNIT THAT INCLUDES A POURING
OPENING****BACKGROUND OF THE INVENTION****FIELD OF THE INVENTION**

[0001] The present invention relates to a beverage packaging unit.

DESCRIPTION OF THE RELATED ART

[0002] In present day society people drink a large number of different sorts of beverages, for instance aerated or carbonated beverages, juices, milk, milk-based beverages, and also packaged beer, ale, and wine, for instance in portion-wise packaging units.

[0003] The most common packaging units for present day beverages are bottles of varying sizes each with its characteristic appearance, i.e., a cylindrical package that narrows at its top to form an opening from which the beverage can be drunk or poured. The opening can be re-sealed with the aid of a screw-threaded cork or a screw cap. The bottles are normally made of plastic, such as PET, or glass.

[0004] Another type of common packaging unit is an aluminum can of cylindrical shape, so as to enable such cans to be mutually stacked, and including a characteristic can opening procedure in which part of the aluminum end in the form of a tab is broken away from the upper end of the can to provide an opening from which the contents of the package can be drunk or poured.

[0005] Another common type of packaging unit is a Tetra Pak® unit with which a plastic wrapped drinking straw is glued to one of the two largest side surfaces of the Tetra Pak® unit. The contents of that packaging unit are typically drunk by removing the straw from the unit and then removing the plastic wrapping and inserting the straw down through an opening provided in the upper side of the Tetra Pak® packaging unit and that is covered with aluminum foil. The contents of the Tetra Pak® unit can then be drunk through the straw.

[0006] Another common beverage packaging unit is a glass bottle that includes a cap fitted over the neck of the bottle, and an opening from which the bottle contents can be drunk or poured.

[0007] All types of packaging units have certain positive and negative aspects. Generally speaking, some packaging units are not transport effective because they cannot be packed tightly together, while others cannot be re-sealed, and because some other packaging units are unhygienic. The drawbacks are described in more detail hereinafter.

[0008] One problem with respect to some packaging units is that they are transported over long distances, most often in large freight vehicles. The shape of cylindrical beverage packaging units prevents optimal use of the freight volume of the vehicle. The typical PET bottles are usually placed in crates, which are then stacked firmly one upon the other. That means that large volumes around the bottles and above and beneath respective bottles go unused. That problem thus also exists with all cylindrical packaging units that have a tapering upper part, where either a screw cork or a screw cap is affixed. Another packaging unit that constitutes a part of this

problem is the typical aluminum can, which is also cylindrical and therefore also results in unused freight volume around the cans.

[0009] Another problem with many beverage packaging units is that they can not be re-sealed. When such a packaging unit has been opened on a given occasion in order to drink its contents, it is normally either necessary for the person concerned to empty the unit of its contents at one and the same time or to throw away beverage that he/she does not wish to drink at that particular time subsequent to having opened the unit.

[0010] The person drinking from a packaging unit will normally wish to drink a small amount, often at different times, and be able to re-seal the unit so that its remaining contents can be drunk later on. One solution to that problem is a bottle that is sealed with a screw-on cork, for instance a PET-bottle, although those bottles have less effective freight-volume properties, as mentioned above. Other typical beverage packaging units, such as aluminum cans, glass bottles provided with caps, or Tetra Pak® packaging units, cannot be re-sealed.

[0011] One further drawback and problem encountered with the Tetra Pak® packaging unit that includes a drinking straw is that the Tetra Pak® unit is deformable. Consequently, when the unit has been opened with the aid of the straw, and while gripping the Tetra Pak® unit with unaccustomed fingers the unit is squeezed together to such an extent that liquid will gush from the Tetra Pak® unit like a fountain and therewith land outside the unit.

[0012] All of the above-described problems associated with known beverage packaging technology are solved by means of the present invention, which provides a stackable and re-sealable and hygienic beverage packaging unit.

SUMMARY OF THE INVENTION

[0013] In accordance with the present invention there is provided a beverage packaging unit that includes an opening from which the liquid contents of the unit can be drunk or poured. The opening can be closed and sealed with the aid of a closure element. The packaging unit is parallelepipedal and includes a hollow, box-like body and the closure element. The parallelepipedal hollow, box-like body has a bevelled corner at which there is formed a three-sided or triangular surface that connects with the box-like body. A tubular part that includes the opening extends from the triangular surface. The closure element includes a generally pyramidal body that is shaped so that when it is in abutment with the bevelled corner of the box-like body it forms, together with the body, the parallelepipedal packaging unit. The closure element includes a cavity for receiving the tubular part, and the packaging unit includes co-acting fasteners on the tubular part and also in the cavity for pivotally retaining the closure element at the tubular part, so that the box-like body and the closure element form a parallelepiped in given pivoted positions of the closure element. The cavity extends through the closure element out to an opening on one of the outer sides of the closure element. The packaging unit is open when the closure element has been pivoted or turned to a position in which the packaging unit opening and the opening in the closure element are opposite one another.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention will be described in more detail below, partly with reference to exemplifying embodiments illustrated in the accompanying drawings in which:

[0015] Figure 1 is a perspective view of an embodiment of a packaging unit in accordance with the present invention, with a closure element including an opening, and in abutment with a box-like body;

[0016] Figure 2 is a side view of the packaging unit shown in Figure 1;

[0017] Figure 3 is a plan view of a bevelled corner of the box-like body, including an outwardly extending tubular part having an opening;

[0018] Figure 4 is a top view of the closure element and its opening; and

[0019] Figure 5 is a top view of the closure element in a closed and an open condition respectively.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] Figure 1 shows an embodiment of a beverage packaging unit 1 that includes an opening from which a beverage can be drunk or poured, which opening is resealable by means of a closure element 3.

[0021] In accordance with the invention, and as shown in Figure 2, the packaging unit 1 is of parallelepipedal form and includes a hollow, box-like body 2 and the closure element 3. One of the corners of the parallelepipedal hollow body 2 is bevelled to provide a three-sided, or triangular, surface 9. The triangular surface 9 is

part of the box-like body 2. An outwardly extending tubular part 4, which includes an opening 5 and an outer end surface 12, is located on the triangular surface 9.

[0022] The closure element 3 includes a generally pyramidal body that is configured so that when the closure element 3 is in abutment with the triangular surface 9 at the bevelled corner of the box-like body 2, the pyramidal body together with the box-like body 2 forms the assembled parallelepipedal packaging unit 1. The closure element 3 includes a cavity 6 that receives the tubular part 4. Mutually co-acting fastening means 11, for instance snap fasteners or screw threads, are provided both on the tubular part 4 and in the cavity 6. The co-acting fastening means 11 serve to retain the rotatably-carried closure element 3 on the tubular part 4, so that the box-like body 2 and the closure element 3 form the parallelepipedal packaging unit 1 in given pivoted positions of the closure element 3. The cavity 6 extends through the closure element 3 to an opening 7 on one of the outer sides 13 of the closure element (see Figure 1). The packaging unit 1 is open for beverage dispensing when the closure element 3 has been pivoted or rotated to a position at which the opening 5 of the tubular part 4 and the opening 7 of the closure element 3 are opposite one another.

[0023] Respective top and bottom surfaces of the packaging unit 1 and the sides of the unit 1 are shown in Figures 1 and 2. The box-like body 2 is shown resting on its bottom surface in Figures 1 and 2. The surface opposite to the bottom surface is referred to as the top surface of the unit 1. The bevelled corner of the box-like body 2 is located at one of the upper corners of the body.

[0024] The closure element 3 is placed at the bevelled corner of the body 2 that is in contact with the top surface of the body. The opening 7 of the closure element 3 is shown in Figures 1 and 2 on the surface of closure element 3 that lies in the plane defined by the top surface of box-like body 2.

[0025] In one embodiment of the invention, the fastening means 11 is a snap fastener. The snap fastener connection is preferably in the form of an edge 8 located externally on the outer end of tubular part 4, which engages with a recess 10 positioned within the cavity 6 of the closure element 3. The fastening means 11 is adapted so that the closure element 3 can be pivoted, or rotated, relative to the tubular part 4.

[0026] Figure 2 is a side view of the packaging unit 1. In one embodiment of the invention, the closure element 3 is in sealing abutment with the opening 5 of the tubular part 4, and also with the top surface 12 of the tubular part 4. In another embodiment of the invention, the closure element 3 is in sealing abutment with the triangular surface 9 of the box-like body 2. In a further embodiment of the present invention, the closure element 3 is in sealing abutment with the opening 5 of the tubular part 4 and the top surface 12 of the tubular part 4, and also with the triangular surface 9 of the box-like body 2.

[0027] The packaging unit 1 is in a closed and sealed state when the opening 5 of the box-like body 2 and the opening 7 of the closure element 3 are not registered opposite one another; see Figures 3, 4, and 5. The non-registered condition is shown on the left side of Figure 5 and is achieved by pivoting or rotating the closure element 3 relative to tubular part 4, enabled by the fastening means 11 of the packaging unit, to

a position in which the opening 7 of the closure element 3 is positioned to overlie the top surface 12 of the tubular part 4. In the registered condition, as shown on the right side of Figure 5, the opening 7 of the closure element 3 is opposite to and overlies the opening 5 of the tubular part 4.

[0028] Preferably, when the packaging unit 1 is in an open or registered condition, the opening 7 of the closure element 3 is positioned on the uppermost side of closure element 3. The beverage contained in the packaging unit 1 is thereby retained until a person wishes to drink from the unit and tilts the unit to enable beverage to flow from the packaging unit through opening 7 of the closure element. That arrangement enables the packaging unit 1 to be filled to its full capacity. If the opening 7 is placed on one of the outer sides 13 of the closure element 3 that do not form an upper side of the unit 1, and if beverage were allowed to flow from the packaging unit 1, the packaging unit could not then be filled to its full capacity.

[0029] As shown in Figure 2, plastic connecting bridges 14 are preferably fastened between the box-like body 2 and closure element 3 when the closure element is in abutment with the body 2, regardless of the embodiment concerned. When rotating the closure element 3 relative to the box-like body 2 to open the unit 1, the bridges 14 will be broken, thereby indicating that the unit has been opened.

[0030] Although a number of embodiments have been described above, it will be understood that the outwardly projecting tubular part 4 of the box-like body 2, the opening 5, the cavity 6 of the closure element 3, and the opening 7 can be designed in some other appropriate manner without departing from the basic concept of the invention.

[0031] The present invention should therefore not be considered to be limited to the described and illustrated exemplifying embodiments thereof, since variations can be made within the scope of the accompanying claims.